

the test. The pad shall be attached by means of wire clips to a 10 cm. × 10 cm. frame of 1 mm. diameter. A wire handle approximately 75 cm. long attached to the frame would facilitate its use on the specimen.

(3) When testing for cracks or openings during the test, the pad shall be held in a vertical position facing the crack or opening with the aperture located in a central part of the cotton wool. The pad may be reused if it has not absorbed any moisture or become charred during the previous application.

(f) *Temperature observations.* (1) All observations shall be taken at intervals not exceeding 5 minutes. The surface temperatures on the unexposed side of the test specimen shall be measured by thermocouples located as follows:

(i) One thermocouple located approximately in the center of each quadrant of the steel plate (four thermocouples total).

(ii) One thermocouple close to the center of the test specimen, but away from the joint, if any.

(iii) At least one thermocouple at the vertical joint of the test specimen.

(iv) Further thermocouples at the discretion of the testing laboratory or Coast Guard for the purpose of determining the temperature at points deemed likely to give a greater temperature rise than any of the above mentioned thermocouples.

(2) The average temperature rise on the unexposed surface shall be obtained by averaging the readings of the thermocouples mentioned in paragraphs (f)(1) (i) and (ii) of this section.

(g) *Other observations.* Throughout the test, observations shall be made of all changes and occurrences, which are not criteria of performance but which may create hazard in case of a fire; for example the emission of appreciable volumes of smoke or noxious vapors from the unexposed side of the test specimen. The specimen shall be examined after the test for changes that have taken place and the information shall be noted in the test report.

(h) *Duration of testing.* The test shall be continued for at least 30 minutes to meet the requirements of § 164.008-2(b) or at least 60 minutes to meet the re-

quirements of § 164.008-2(c). In either case, the test shall be continued until the maximum surface temperature rise values noted in § 164.008-4(a) have been reached, or until cracks which lead to flaming as specified in § 164.008-4(b) are formed.

§ 164.008-4 Test requirements.

(a) Thermal insulation: The insulation value of the specimens for the full scale test shall be such that the average temperature of thermocouples on the unexposed surface described in § 164.008-3(f)(2) will not rise more than 139 °C. (250 °F.) above the initial temperature, nor will the temperature at any point on the surface, including any joint, rise more than 225 °C. (405 °F.) above the initial temperature at the end of 15 minutes. When failure is due to excessive temperature rise on the joint, consideration will be given to alternate joint construction. The results obtained on the small scale test (2'×2' (60 cm. × 60 cm.)) shall be recorded.

(b) The test shall determine the length of time, up to one hour, that the bulkhead panel, including the joint can withstand the passage of flame. Cracks and openings shall not be such as to lead to flaming of a cotton wool test pad as prescribed in § 164.008-3(e)(3) held facing the aperture at about 25 mm. for a period of 30 seconds. If no flaming occurs, the pad shall be removed and re-applied after a suitable interval.

§ 164.008-5 Test report.

(a) The test report required by § 164.008-7 (e) and (g) shall include at least the following:

(1) Name of manufacturer.

(2) Purpose of test.

(3) Test conditions and date of test.

(4) Description of the panel tested giving size, thickness, density, detail of joint and method of assembling in test furnace.

(5) Complete time-temperature data, including initial temperature, for each thermocouple together with curves of average temperature for the unexposed surface of the insulation and the thermocouple recording the highest temperature. In addition, for § 164.008-7(g)(2) complete time-temperature data consisting of a numerical time-temperature table for each furnace and

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each surface of insulation thermocouple together with the initial temperature of each thermocouple.

(6) A log setting forth the observer's notes relative to deflections, smoke or gas emission, glow, flame emission, and any other important data. The time of each observation should be noted.

(7) Complete observations on the appearance of cracks and data on the testing of the cracks as specified in § 164.008-4(b).

(8) Photographs of both sides of the panel before and after testing.

(9) Summary of test results.

(b) [Reserved]

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§ 164.008-6 Retests.

(a) Manufacturers of approved bulkhead panels shall maintain quality control of materials used, manufacturing methods, and the finished product utilizing appropriate quality control testing so as to meet the requirements of this specification, and any other conditions outlined on the certificate of approval. Bulkhead panels are not inspected at regularly scheduled factory inspections; however, approved bulkhead panels are subject to retest for continued compliance with the requirements of this subpart on the following basis:

(1) The Coast Guard may detail a marine inspector or other Coast Guard designated inspector at any time to visit any place where bulkhead panels are manufactured to conduct any inspections or examinations deemed advisable and to select representative samples for further examination, inspection, or tests. The inspector shall be admitted to any place where work is done on bulkhead panels or component materials.

(2) At a frequency of not less than once every 5 years following issuance of approval, samples of an approved bulkhead panel selected from production stock shall be forwarded by the inspector to the Commandant for testing in accordance with the requirements of this subpart. Where the plant is outside the jurisdiction of a Coast Guard District Commander, the frequency of such selection and testing shall be

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every 2 years. The cost of such testing shall be borne by the manufacturer. The nature of the product or its production may dictate a differing retest frequency.

(3) The Coast Guard reserves the right to make spot-check tests of approved bulkhead panels at any time on samples selected by a marine inspector obtained during installation on a vessel. The manufacturer will incur no expense for such tests, but the results shall be binding upon the approval of his product.

(b) A small scale furnace test (2'x2' furnace test) shall be conducted. The time of failure shall not vary from the original (2'x2' furnace) test values by more than 10 percent. In addition, tests shall be conducted to determine combustibility (§ 164.009), density and thickness. Values on retesting for density and thickness shall not vary from the original test values by more than 10 percent.

§ 164.008-7 Procedure for approval.

The following items shall be accomplished in sequential order.

(a) *Test request information.* If a manufacturer desires to have a bulkhead panel approved, a written request shall be submitted to the Commandant of the Coast Guard, together with the following:

(1) If the material has already been approved as an "Incombustible Material" under subpart 164.009 of this part, the approval number of the material shall be indicated. If not, the procedure set forth in subpart 164.009 of this part shall be followed; and such approval shall be obtained prior to submittal under this specification.

(2) The description and trade name of the bulkhead panel.

(3) A statement of the composition of the material and the percentage of each component.

(4) A sample of the material at least 1 foot square in each thickness and density of the material as manufactured.

(5) The range of thicknesses and/or densities in which it is proposed to manufacture or use the material, together with any information or recommendations the manufacturer may